SEQUENCE LISTING

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<110>  Behl, Christian
       Klostermann, Andreas

<120>  Human semaphorin 6A-1 (SEMA6A-A), a gene involved in neuronal
       development and regeneration mechanisms during apoptosis, and its
       use as a potential drug target

<130>  48498-0100 (48498-258443)

<140>  US 09/856,681
<141>  2001-08-03

<150>  PCT/EP99/09215
<151>  1999-11-26

<150>  EP 98122441.3
<151>  1998-11-26

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<170>  PatentIn version 3.2

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Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
                20                  25                  30

aac tat aca aaa cag tat ccg gtg ttt gtg ggc cac aag cca gga cgg       144
Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
            35                  40                  45

aac acc aca cag agg cac agg ctg gac atc cag atg att atg atc atg       192
Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
    50                  55                  60
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aac gga acc ctc tac att gct gct agg gac cat att tat act gtt gat        240
Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp
65                  70                  75                  80

ata gac aca tca cac acg gaa gaa att tat tgt agc aaa aaa ctg aca        288
Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
                    85                  90                  95

tgg aaa tct aga cag gcc gat gta gac aca tgc aga atg aag gga aaa        336
Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
                100                 105                 110

cat aag gat gag tgc cac aac ttt att aaa gtt ctt cta aag aaa aac        384
His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
            115                 120                 125

gat gat gca ttg ttt gtc tgt gga act aat gcc ttc aac cct tcc tgc        432
Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys
        130                 135                 140

aga aac tat aag atg gat aca ttg gaa cca ttc ggg gat gaa ttc agc        480
Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser
145                 150                 155                 160

gga atg gcc aga tgc cca tat gat gcc aaa cat gcc aac gtt gca ctg        528
Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu
                165                 170                 175

ttt gca gat gga aaa cta tac tca gcc aca gtg act gac ttc ctt gcc        576
Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala
            180                 185                 190

att gac gca gtc att tac cgg agt ctt gga gaa agc cct acc ctg cgg        624
Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg
        195                 200                 205

acc gtc aag cac gat tca aaa tgg ttg aaa gaa cca tac ttt gtt caa        672
Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln
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gcc gtg gat tac gga gat tat atc tac ttc ttc ttc agg gaa ata gca        720
Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala
225                 230                 235                 240

gtg gag tat aac acc atg gga aag gta gtt ttc cca aga gtg gct cag        768
Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln
                245                 250                 255

gtt tgt aag aat gat atg gga gga tct caa aga gtc ctg gag aaa cag        816
Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln
            260                 265                 270
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tgg acg tcg ttc ctg aag gcg cgc ttg aac tgc tca gtt cct gga gac      864
Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp
        275                 280                 285

tct cat ttt tat ttc aac att ctc cag gca gtt aca gat gtg att cgt      912
Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg
    290                 295                 300

atc aac ggg cgt gat gtt gtc ctg gca acg ttt tct aca cct tat aac      960
Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn
305                 310                 315                 320

agc atc cct ggg tct gca gtc tgt gcc tat gac atg ctt gac att gcc     1008
Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala
                325                 330                 335

agt gtt ttt act ggg aga ttc aag gaa cag aag tct cct gat tcc acc     1056
Ser Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr
            340                 345                 350

tgg aca cca gtt cct gat gaa cga gtt cct aag ccc agg cca ggt tgc     1104
Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys
        355                 360                 365

tgt gct ggc tca tcc tcc tta gaa aga tat gca acc tcc aat gag ttc     1152
Cys Ala Gly Ser Ser Ser Leu Glu Arg Tyr Ala Thr Ser Asn Glu Phe
    370                 375                 380

cct gat gat acc ctg aac ttc atc aag acg cac ccg ctc atg gat gag     1200
Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu
385                 390                 395                 400

gca gtg ccc tcc atc ttc aac agg cca tgg ttc ctg aga aca atg gtc     1248
Ala Val Pro Ser Ile Phe Asn Arg Pro Trp Phe Leu Arg Thr Met Val
                405                 410                 415

aga tac cgc ctt acc aaa att gca gtg gac aca gct gct ggg cca tat     1296
Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Thr Ala Ala Gly Pro Tyr
            420                 425                 430

cag aat cac act gtg gtt ttt ctg gga tca gag aag gga atc atc ttg     1344
Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu
        435                 440                 445

aag ttt ttg gcc aga ata gga aat agt ggt ttt cta aat gac agc ctt     1392
Lys Phe Leu Ala Arg Ile Gly Asn Ser Gly Phe Leu Asn Asp Ser Leu
450                 455                 460

ttc ctg gag gag atg agt gtt tac aac tct gaa aaa tgc agc tat gat     1440
Phe Leu Glu Glu Met Ser Val Tyr Asn Ser Glu Lys Cys Ser Tyr Asp
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gga gtc gaa gac aaa agg atc atg ggc atg cag ctg gac aga gca agc      1488
Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser
                  485                    490                    495

agc tct ctg tat gtt gcg ttc tct acc tgt gtg ata aag gtt ccc ctt      1536
Ser Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu
                  500                    505                    510

ggc cgg tgt gaa cga cat ggg aag tgt aaa aaa acc tgt att gcc tcc      1584
Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser
                  515                    520                    525

aga gac cca tat tgt gga tgg ata aag gaa ggt ggt gcc tgc agc cat      1632
Arg Asp Pro Tyr Cys Gly Trp Ile Lys Glu Gly Gly Ala Cys Ser His
                  530                    535                    540

tta tca ccc aac agc aga ctg act ttt gag cag gac ata gag cgt ggc      1680
Leu Ser Pro Asn Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly
                  545                    550                    555

aat aca gat ggt ctg ggg gac tgt cac aat tcc ttt gtg gca ctg aat      1728
Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn
                  565                    570                    575

ggg cat tcc agt tcc ctc ttg ccc agc aca acc aca tca gat tcg acg      1776
Gly His Ser Ser Ser Leu Leu Pro Ser Thr Thr Thr Ser Asp Ser Thr
                  580                    585                    590

gct caa gag ggg tat gag tct agg gga gga atg ctg gac tgg aag cat      1824
Ala Gln Glu Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Lys His
                  595                    600                    605

ctg ctt gac tca cct gac agc aca gac cct ttg ggg gca gtg tct tcc      1872
Leu Leu Asp Ser Pro Asp Ser Thr Asp Pro Leu Gly Ala Val Ser Ser
                  610                    615                    620

cat aat cac caa gac aag aag gga gtg att cgg gaa agt tac ctc aaa      1920
His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys
625                    630                    635                    640

ggc cac gac cag ctg gtt ccc gtc acc ctc ttg gcc att gca gtc atc      1968
Gly His Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile
                  645                    650                    655

ctg gct ttc gtc atg ggg gcc gtc ttc tcg ggc atc acc gtc tac tgc      2016
Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Thr Val Tyr Cys
                  660                    665                    670

gtc tgt gat cat cgg cgc aaa gac gtg gct gtg gtg cag cgc aag gag      2064
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Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu
        675             680             685

aag gag ctc acc cac tcg cgc cgg ggc tcc atg agc agc gtc acc aag    2112
Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys
        690             695             700

ctc agc ggc ctc ttt ggg gac act caa tcc aaa gac cca aag ccg gag    2160
Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu
705             710             715             720

gcc atc ctc acg cca ctc atg cac aac ggc aag ctc gcc act ccc ggc    2208
Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Gly
            725             730             735

aac acg gcc aag atg ctc att aaa gca gac cag cac cac ctg gac ctg    2256
Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
            740             745             750

acg gcc ctc ccc acc cca gag tca acc cca acg ctg cag cag aag cgg    2304
Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Gln Lys Arg
            755             760             765

aag ccc agc cgc ggc agc cgc gag tgg gag agg aac cag aac ctc atc    2352
Lys Pro Ser Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Leu Ile
            770             775             780

aat gcc tgc aca aag gac atg ccc ccc atg ggc tcc cct gtg att ccc    2400
Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro
785             790             795             800

acg gac ctg ccc ctg cgg gcc tcc ccc agc cac atc ccc agc gtg gtg    2448
Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val
            805             810             815

gtc ctg ccc atc acg cag cag ggc tac cag cat gag tac gtg gac cag    2496
Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln
            820             825             830

ccc aaa atg agc gag gtg gcc cag atg gcg ctg gag gac cag gcc gcc    2544
Pro Lys Met Ser Glu Val Ala Gln Met Ala Leu Glu Asp Gln Ala Ala
            835             840             845

aca ctg gag tat aag acc atc aag gaa cat ctc agc agc aag agt ccc    2592
Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Lys Ser Pro
            850             855             860

aac cat ggg gtg aac ctt gtg gag aac ctg gac agc ctg ccc ccc aaa    2640
Asn His Gly Val Asn Leu Val Glu Asn Leu Asp Ser Leu Pro Pro Lys
865             870             875             880
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gtt cca cag cgg gag gcc tcc ctg ggt ccc ccg gga gcc tcc ctg tct      2688
Val Pro Gln Arg Glu Ala Ser Leu Gly Pro Pro Gly Ala Ser Leu Ser
            885                     890                     895

cag acc ggt cta agc aag cgg ctg gaa atg cac cac tcc tct tcc tac      2736
Gln Thr Gly Leu Ser Lys Arg Leu Glu Met His His Ser Ser Ser Tyr
            900                     905                     910

ggg gtt gac tat aag agg agc tac ccc acg aac tcg ctc acg aga agc      2784
Gly Val Asp Tyr Lys Arg Ser Tyr Pro Thr Asn Ser Leu Thr Arg Ser
            915                     920                     925

cac cag gcc acc act ctc aaa aga aac aac act aac tcc tcc aat tcc      2832
His Gln Ala Thr Thr Leu Lys Arg Asn Asn Thr Asn Ser Ser Asn Ser
        930                     935                     940

tct cac ctc tcc aga aac cag agc ttt ggc agg gga gac aac ccg ccg      2880
Ser His Leu Ser Arg Asn Gln Ser Phe Gly Arg Gly Asp Asn Pro Pro
945                     950                     955                     960

ccc gcc ccg cag agg gtg gac tcc atc cag gtg cac agc tcc cag cca      2928
Pro Ala Pro Gln Arg Val Asp Ser Ile Gln Val His Ser Ser Gln Pro
            965                     970                     975

tct ggc cag gcc gtg act gtc tcg agg cag ccc agc ctc aac gcc tac      2976
Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn Ala Tyr
            980                     985                     990

aac tca ctg aca agg tcg ggg ctg  aag cgt acg ccc tcg  cta aag ccg    3024
Asn Ser Leu Thr Arg Ser Gly Leu  Lys Arg Thr Pro Ser  Leu Lys Pro
            995                 1000                    1005

gac gta  ccc ccc aaa cca tcc  ttt gct ccc ctt tcc  aca tcc atg       3069
Asp Val  Pro Pro Lys Pro Ser  Phe Ala Pro Leu Ser  Thr Ser Met
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        1025                1030


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            20                  25                  30

Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
        35                  40                  45

Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
    50                  55                  60

Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp
65                  70                  75                  80

Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
                85                  90                  95

Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
            100                 105                 110

His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
        115                 120                 125

Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys
    130                 135                 140

Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser
145                 150                 155                 160

Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu
            165                 170                 175

Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala
        180                 185                 190

Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg
    195                 200                 205

Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln
    210                 215                 220
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Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala
225                 230             235                     240

Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln
                245             250                 255

Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln
                260             265             270

Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp
            275             280             285

Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg
        290             295             300

Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn
305             310             315                     320

Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala
            325             330                     335

Ser Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr
            340             345             350

Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys
        355             360             365

Cys Ala Gly Ser Ser Ser Leu Glu Arg Tyr Ala Thr Ser Asn Glu Phe
        370             375             380

Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu
385             390             395                     400

Ala Val Pro Ser Ile Phe Asn Arg Pro Trp Phe Leu Arg Thr Met Val
            405             410                     415

Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Thr Ala Ala Gly Pro Tyr
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Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu
        435                     440                     445

Lys Phe Leu Ala Arg Ile Gly Asn Ser Gly Phe Leu Asn Asp Ser Leu
    450                     455                     460

Phe Leu Glu Glu Met Ser Val Tyr Asn Ser Glu Lys Cys Ser Tyr Asp
465                     470                     475                     480

Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser
                485                     490                     495

Ser Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu
        500                     505                     510

Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser
        515                     520                     525

Arg Asp Pro Tyr Cys Gly Trp Ile Lys Glu Gly Gly Ala Cys Ser His
    530                     535                     540

Leu Ser Pro Asn Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly
545                     550                     555                     560

Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn
                565                     570                     575

Gly His Ser Ser Ser Leu Leu Pro Ser Thr Thr Thr Ser Asp Ser Thr
        580                     585                     590

Ala Gln Glu Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Lys His
        595                     600                     605

Leu Leu Asp Ser Pro Asp Ser Thr Asp Pro Leu Gly Ala Val Ser Ser
    610                     615                     620
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His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys
625                     630                 635                 640

Gly His Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile
                    645                 650                 655

Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Thr Val Tyr Cys
                660                 665                 670

Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu
        675                 680                 685

Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys
    690                 695                 700

Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu
705                 710                 715                 720

Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Gly
                725                 730                 735

Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
            740                 745                 750

Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Gln Lys Arg
        755                 760                 765

Lys Pro Ser Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Leu Ile
    770                 775                 780

Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro
785                 790                 795                 800

Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val
                805                 810                 815

Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln
            820                 825                 830
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Pro Lys Met Ser Glu Val Ala Gln Met Ala Leu Glu Asp Gln Ala Ala
        835                 840                 845

Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Lys Ser Pro
    850                 855                 860

Asn His Gly Val Asn Leu Val Glu Asn Leu Asp Ser Leu Pro Pro Lys
865                 870                 875                 880

Val Pro Gln Arg Glu Ala Ser Leu Gly Pro Pro Gly Ala Ser Leu Ser
                885                 890                 895

Gln Thr Gly Leu Ser Lys Arg Leu Glu Met His His Ser Ser Ser Tyr
            900                 905                 910

Gly Val Asp Tyr Lys Arg Ser Tyr Pro Thr Asn Ser Leu Thr Arg Ser
        915                 920                 925

His Gln Ala Thr Thr Leu Lys Arg Asn Asn Thr Asn Ser Ser Asn Ser
    930                 935                 940

Ser His Leu Ser Arg Asn Gln Ser Phe Gly Arg Gly Asp Asn Pro Pro
945                 950                 955                 960

Pro Ala Pro Gln Arg Val Asp Ser Ile Gln Val His Ser Ser Gln Pro
                965                 970                 975

Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn Ala Tyr
            980                 985                 990

Asn Ser Leu Thr Arg Ser Gly Leu   Lys Arg Thr Pro Ser   Leu Lys Pro
        995                 1000                 1005

Asp Val   Pro Pro Lys Pro Ser   Phe Ala Pro Leu Ser   Thr Ser Met
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Lys Pro   Asn Asp Ala Cys Thr
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cag cca tct ggc cag gcc gtg act gtc tcg agg cag ccc agc ctc aac      96
Gln Pro Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn
                20                  25                  30

gcc tac aac tca ctg aca agg tcg ggg ctg aag cgt acg ccc tcg cta     144
Ala Tyr Asn Ser Leu Thr Arg Ser Gly Leu Lys Arg Thr Pro Ser Leu
            35                  40                  45

aag ccg gac gta ccc ccc aaa cca tcc ttt gct ccc ctt tcc aca tcc     192
Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Ala Pro Leu Ser Thr Ser
        50                  55                  60

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Met Lys Pro Asn Asp Ala Cys Thr
65                  70


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1                5                   10                  15


Gln Pro Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn
                20                  25                  30


Ala Tyr Asn Ser Leu Thr Arg Ser Gly Leu Lys Arg Thr Pro Ser Leu
            35                  40                  45
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Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Ala Pro Leu Ser Thr Ser
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Met Lys Pro Asn Asp Ala Cys Thr
65                  70
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1               5                   10                  15


Pro Gln Ala Lys Pro His Val Gln Pro Gln Pro Val Ser Ser Ala Asn
            20                  25                  30


Thr Gln Pro Arg Gly Pro Leu Ser Gln Ala Pro Thr Pro Ala Pro Lys
        35                  40                  45


Phe Ala Pro Val Ala Pro Lys Phe Thr Pro Val Val Ser Lys Phe Ser
    50                  55                  60


Pro
65
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agcggccagc atcaccacac ccgcggcacc gcgctgccgg ccgcagagcc gggccagagc      180

cttgcccccc tcccccagcc cccaccccgc ccccgcccct gaaatgactt gttaatcggc      240

gcagacacca ccaaggggac tcaccgaagt ggaatccaag tggaatttgg atttggagaa      300

gagtttcttg aacatttacc ctcttccttg ttggttttct ttttcttttt cttctttttt      360

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tttgcatccc agaaagtagt cgccgcgact atttccccca aagagacaag cacacatgta      480

ggaatgacaa aggcttgcga aggagagagc cgcagccgcg gcccggagag atcccctcga      540

taatggatta ctaaatggga tacacgctgt accagttcgc tccgagcccc ggccgcctgt      600

ccgtcgatgc accgaaaagg gtgaagtaga gaaataaagt ctccccgctg aactact       657

atg agg tca gaa gcc ttg ctg cta tat ttc aca ctg cta cac ttt gct       705
Met Arg Ser Glu Ala Leu Leu Leu Tyr Phe Thr Leu Leu His Phe Ala
1               5                   10                  15

ggg gct ggt ttc cca gaa gat tct gag cca atc agt att tcg cat ggc       753
Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
                20                  25                  30

aac tat aca aaa cag tat ccg gtg ttt gtg ggc cac aag cca gga cgg       801
Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
            35                  40                  45

aac acc aca cag agg cac agg ctg gac atc cag atg att atg atc atg       849
Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
    50                  55                  60

aac gga acc ctc tac att gct gct agg gac cat att tat act gtt gat       897
Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp
65                  70                  75                  80

ata gac aca tca cac acg gaa gaa att tat tgt agc aaa aaa ctg aca       945
Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
                85                  90                  95

tgg aaa tct aga cag gcc gat gta gac aca tgc aga atg aag gga aaa       993
Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
                100                 105                 110

cat aag gat gag tgc cac aac ttt att aaa gtt ctt cta aag aaa aac      1041
His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
            115                 120                 125
```

```
gat gat gca ttg ttt gtc tgt gga act aat gcc ttc aac cct tcc tgc    1089
Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys
    130                     135                 140

aga aac tat aag atg gat aca ttg gaa cca ttc ggg gat gaa ttc agc    1137
Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser
145                     150                 155                 160

gga atg gcc aga tgc cca tat gat gcc aaa cat gcc aac gtt gca ctg    1185
Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu
                165                 170                 175

ttt gca gat gga aaa cta tac tca gcc aca gtg act gac ttc ctt gcc    1233
Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala
                180                 185                 190

att gac gca gtc att tac cgg agt ctt gga gaa agc cct acc ctg cgg    1281
Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg
            195                 200                 205

acc gtc aag cac gat tca aaa tgg ttg aaa gaa cca tac ttt gtt caa    1329
Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln
        210                 215                 220

gcc gtg gat tac gga gat tat atc tac ttc ttc ttc agg gaa ata gca    1377
Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala
225                 230                 235                 240

gtg gag tat aac acc atg gga aag gta gtt ttc cca aga gtg gct cag    1425
Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln
                245                 250                 255

gtt tgt aag aat gat atg gga gga tct caa aga gtc ctg gag aaa cag    1473
Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln
                260                 265                 270

tgg acg tcg ttc ctg aag gcg cgc ttg aac tgc tca gtt cct gga gac    1521
Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp
            275                 280                 285

tct cat ttt tat ttc aac att ctc cag gca gtt aca gat gtg att cgt    1569
Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg
        290                 295                 300

atc aac ggg cgt gat gtt gtc ctg gca acg ttt tct aca cct tat aac    1617
Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn
305                 310                 315                 320

agc atc cct ggg tct gca gtc tgt gcc tat gac atg ctt gac att gcc    1665
Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala
                325                 330                 335
```

```
agt gtt ttt act ggg aga ttc aag gaa cag aag tct cct gat tcc acc      1713
Ser Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr
            340                 345                 350

tgg aca cca gtt cct gat gaa cga gtt cct aag ccc agg cca ggt tgc      1761
Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys
        355                 360                 365

tgt gct ggc tca tcc tcc tta gaa aga tat gca acc tcc aat gag ttc      1809
Cys Ala Gly Ser Ser Ser Leu Glu Arg Tyr Ala Thr Ser Asn Glu Phe
    370                 375                 380

cct gat gat acc ctg aac ttc atc aag acg cac ccg ctc atg gat gag      1857
Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu
385                 390                 395                 400

gca gtg ccc tcc atc ttc aac agg cca tgg ttc ctg aga aca atg gtc      1905
Ala Val Pro Ser Ile Phe Asn Arg Pro Trp Phe Leu Arg Thr Met Val
                405                 410                 415

aga tac cgc ctt acc aaa att gca gtg gac aca gct gct ggg cca tat      1953
Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Thr Ala Ala Gly Pro Tyr
                420                 425                 430

cag aat cac act gtg gtt ttt ctg gga tca gag aag gga atc atc ttg      2001
Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu
        435                 440                 445

aag ttt ttg gcc aga ata gga aat agt ggt ttt cta aat gac agc ctt      2049
Lys Phe Leu Ala Arg Ile Gly Asn Ser Gly Phe Leu Asn Asp Ser Leu
    450                 455                 460

ttc ctg gag gag atg agt gtt tac aac tct gaa aaa tgc agc tat gat      2097
Phe Leu Glu Glu Met Ser Val Tyr Asn Ser Glu Lys Cys Ser Tyr Asp
465                 470                 475                 480

gga gtc gaa gac aaa agg atc atg ggc atg cag ctg gac aga gca agc      2145
Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser
                485                 490                 495

agc tct ctg tat gtt gcg ttc tct acc tgt gtg ata aag gtt ccc ctt      2193
Ser Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu
                500                 505                 510

ggc cgg tgt gaa cga cat ggg aag tgt aaa aaa acc tgt att gcc tcc      2241
Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser
        515                 520                 525

aga gac cca tat tgt gga tgg ata aag gaa ggt ggt gcc tgc agc cat      2289
Arg Asp Pro Tyr Cys Gly Trp Ile Lys Glu Gly Gly Ala Cys Ser His
```

```
        530                      535                      540
tta tca ccc aac agc aga ctg act ttt gag cag gac ata gag cgt ggc    2337
Leu Ser Pro Asn Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly
545                      550                      555                      560

aat aca gat ggt ctg ggg gac tgt cac aat tcc ttt gtg gca ctg aat    2385
Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn
                  565                      570                      575

ggg cat tcc agt tcc ctc ttg ccc agc aca acc aca tca gat tcg acg    2433
Gly His Ser Ser Ser Leu Leu Pro Ser Thr Thr Thr Ser Asp Ser Thr
                  580                      585                      590

gct caa gag ggg tat gag tct agg gga gga atg ctg gac tgg aag cat    2481
Ala Gln Glu Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Lys His
                  595                      600                      605

ctg ctt gac tca cct gac agc aca gac cct ttg ggg gca gtg tct tcc    2529
Leu Leu Asp Ser Pro Asp Ser Thr Asp Pro Leu Gly Ala Val Ser Ser
         610                      615                      620

cat aat cac caa gac aag aag gga gtg att cgg gaa agt tac ctc aaa    2577
His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys
625                      630                      635                      640

ggc cac gac cag ctg gtt ccc gtc acc ctc ttg gcc att gca gtc atc    2625
Gly His Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile
                  645                      650                      655

ctg gct ttc gtc atg ggg gcc gtc ttc tcg ggc atc acc gtc tac tgc    2673
Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Thr Val Tyr Cys
                  660                      665                      670

gtc tgt gat cat cgg cgc aaa gac gtg gct gtg gtg cag cgc aag gag    2721
Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu
         675                      680                      685

aag gag ctc acc cac tcg cgc cgg ggc tcc atg agc agc gtc acc aag    2769
Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys
         690                      695                      700

ctc agc ggc ctc ttt ggg gac act caa tcc aaa gac cca aag ccg gag    2817
Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu
705                      710                      715                      720

gcc atc ctc acg cca ctc atg cac aac ggc aag ctc gcc act ccc ggc    2865
Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Gly
                  725                      730                      735

aac acg gcc aag atg ctc att aaa gca gac cag cac cac ctg gac ctg    2913
Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
```

```
Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
            740                 745                 750
```

```
acg gcc ctc ccc acc cca gag tca acc cca acg ctg cag cag aag cgg      2961
Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Gln Lys Arg
            755                 760                 765
```

```
aag ccc agc cgc ggc agc cgc gag tgg gag agg aac cag aac ctc atc      3009
Lys Pro Ser Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Leu Ile
            770                 775                 780
```

```
aat gcc tgc aca aag gac atg ccc ccc atg ggc tcc cct gtg att ccc      3057
Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro
785                 790                 795                 800
```

```
acg gac ctg ccc ctg cgg gcc tcc ccc agc cac atc ccc agc gtg gtg      3105
Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val
                805                 810                 815
```

```
gtc ctg ccc atc acg cag cag ggc tac cag cat gag tac gtg gac cag      3153
Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln
                820                 825                 830
```

```
ccc aaa atg agc gag gtg gcc cag atg gcg ctg gag gac cag gcc gcc      3201
Pro Lys Met Ser Glu Val Ala Gln Met Ala Leu Glu Asp Gln Ala Ala
                835                 840                 845
```

```
aca ctg gag tat aag acc atc aag gaa cat ctc agc agc aag agt ccc      3249
Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Lys Ser Pro
            850                 855                 860
```

```
aac cat ggg gtg aac ctt gtg gag aac ctg gac agc ctg ccc ccc aaa      3297
Asn His Gly Val Asn Leu Val Glu Asn Leu Asp Ser Leu Pro Pro Lys
865                 870                 875                 880
```

```
gtt cca cag cgg gag gcc tcc ctg ggt ccc ccg gga gcc tcc ctg tct      3345
Val Pro Gln Arg Glu Ala Ser Leu Gly Pro Pro Gly Ala Ser Leu Ser
                885                 890                 895
```

```
cag acc ggt cta agc aag cgg ctg gaa atg cac cac tcc tct tcc tac      3393
Gln Thr Gly Leu Ser Lys Arg Leu Glu Met His His Ser Ser Ser Tyr
                900                 905                 910
```

```
ggg gtt gac tat aag agg agc tac ccc acg aac tcg ctc acg aga agc      3441
Gly Val Asp Tyr Lys Arg Ser Tyr Pro Thr Asn Ser Leu Thr Arg Ser
                915                 920                 925
```

```
cac cag gcc acc act ctc aaa aga aac aac act aac tcc tcc aat tcc      3489
His Gln Ala Thr Thr Leu Lys Arg Asn Asn Thr Asn Ser Ser Asn Ser
    930                 935                 940
```

```
tct cac ctc tcc aga aac cag agc ttt ggc agg gga gac aac ccg ccg      3537
Ser His Leu Ser Arg Asn Gln Ser Phe Gly Arg Gly Asp Asn Pro Pro
945                     950                 955                 960

ccc gcc ccg cag agg gtg gac tcc atc cag gtg cac agc tcc cag cca      3585
Pro Ala Pro Gln Arg Val Asp Ser Ile Gln Val His Ser Ser Gln Pro
                965                 970                 975

tct ggc cag gcc gtg act gtc tcg agg cag ccc agc ctc aac gcc tac      3633
Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn Ala Tyr
            980                 985                 990

aac tca ctg aca agg tcg ggg ctg  aag cgt acg ccc tcg  cta aag ccg    3681
Asn Ser Leu Thr Arg Ser Gly Leu  Lys Arg Thr Pro Ser  Leu Lys Pro
        995                 1000                1005

gac gta  ccc ccc aaa cca tcc  ttt gct ccc ctt tcc  aca tcc atg       3726
Asp Val  Pro Pro Lys Pro Ser  Phe Ala Pro Leu Ser  Thr Ser Met
    1010                1015                1020

aag ccc  aat gat gcg tgt aca  taa tcccaggggg aggggtcag               3770
Lys Pro  Asn Asp Ala Cys Thr
    1025                1030

gtgtcgaacc agcaggcaag gcgaggtgcc cgctcagctc agcaaggttc tcaactgcct     3830

cgagtaccca ccagaccaag aaggcctgcg gc                                   3862


<210>  7
<211>  1030
<212>  PRT
<213>  Homo sapiens

<400>  7

Met Arg Ser Glu Ala Leu Leu Leu Tyr Phe Thr Leu Leu His Phe Ala
1               5                   10                  15


Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
            20                  25                  30


Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
        35                  40                  45


Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
    50                  55                  60
```

```
Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp
65                  70                  75                      80

Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
                85                  90                  95

Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
            100                 105                 110

His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
        115                 120                 125

Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys
        130                 135                 140

Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser
145                 150                 155                     160

Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu
            165                 170                 175

Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala
            180                 185                 190

Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg
        195                 200                 205

Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln
        210                 215                 220

Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala
225                 230                 235                     240

Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln
            245                 250                 255

Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln
            260                 265                 270
```

Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp
            275   280   285

Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg
        290   295   300

Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn
305   310   315   320

Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala
                325   330   335

Ser Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr
            340   345   350

Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys
            355   360   365

Cys Ala Gly Ser Ser Ser Leu Glu Arg Tyr Ala Thr Ser Asn Glu Phe
        370   375   380

Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu
385   390   395   400

Ala Val Pro Ser Ile Phe Asn Arg Pro Trp Phe Leu Arg Thr Met Val
                405   410   415

Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Thr Ala Ala Gly Pro Tyr
            420   425   430

Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu
        435   440   445

Lys Phe Leu Ala Arg Ile Gly Asn Ser Gly Phe Leu Asn Asp Ser Leu
    450   455   460

Phe Leu Glu Glu Met Ser Val Tyr Asn Ser Glu Lys Cys Ser Tyr Asp

```
465                   470                 475                     480


Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser
                485                 490                     495


Ser Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu
                500                 505                 510


Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser
            515                 520                 525


Arg Asp Pro Tyr Cys Gly Trp Ile Lys Glu Gly Gly Ala Cys Ser His
        530                 535                 540


Leu Ser Pro Asn Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly
545                 550                 555                     560


Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn
                565                 570                 575


Gly His Ser Ser Ser Leu Leu Pro Ser Thr Thr Thr Ser Asp Ser Thr
            580                 585                 590


Ala Gln Glu Gly Tyr Glu Ser Arg Gly Gly Met Leu Asp Trp Lys His
        595                 600                 605


Leu Leu Asp Ser Pro Asp Ser Thr Asp Pro Leu Gly Ala Val Ser Ser
    610                 615                 620


His Asn His Gln Asp Lys Lys Gly Val Ile Arg Glu Ser Tyr Leu Lys
625                 630                 635                     640


Gly His Asp Gln Leu Val Pro Val Thr Leu Leu Ala Ile Ala Val Ile
            645                 650                 655


Leu Ala Phe Val Met Gly Ala Val Phe Ser Gly Ile Thr Val Tyr Cys
            660                 665                 670
```

```
Val Cys Asp His Arg Arg Lys Asp Val Ala Val Val Gln Arg Lys Glu
        675                 680                 685

Lys Glu Leu Thr His Ser Arg Arg Gly Ser Met Ser Ser Val Thr Lys
    690                 695                 700

Leu Ser Gly Leu Phe Gly Asp Thr Gln Ser Lys Asp Pro Lys Pro Glu
705                 710                 715                 720

Ala Ile Leu Thr Pro Leu Met His Asn Gly Lys Leu Ala Thr Pro Gly
                725                 730                 735

Asn Thr Ala Lys Met Leu Ile Lys Ala Asp Gln His His Leu Asp Leu
                740                 745                 750

Thr Ala Leu Pro Thr Pro Glu Ser Thr Pro Thr Leu Gln Gln Lys Arg
        755                 760                 765

Lys Pro Ser Arg Gly Ser Arg Glu Trp Glu Arg Asn Gln Asn Leu Ile
    770                 775                 780

Asn Ala Cys Thr Lys Asp Met Pro Pro Met Gly Ser Pro Val Ile Pro
785                 790                 795                 800

Thr Asp Leu Pro Leu Arg Ala Ser Pro Ser His Ile Pro Ser Val Val
                805                 810                 815

Val Leu Pro Ile Thr Gln Gln Gly Tyr Gln His Glu Tyr Val Asp Gln
                820                 825                 830

Pro Lys Met Ser Glu Val Ala Gln Met Ala Leu Glu Asp Gln Ala Ala
        835                 840                 845

Thr Leu Glu Tyr Lys Thr Ile Lys Glu His Leu Ser Ser Lys Ser Pro
    850                 855                 860

Asn His Gly Val Asn Leu Val Glu Asn Leu Asp Ser Leu Pro Pro Lys
865                 870                 875                 880
```

```
Val Pro Gln Arg Glu Ala Ser Leu Gly Pro Pro Gly Ala Ser Leu Ser
                885                 890                 895

Gln Thr Gly Leu Ser Lys Arg Leu Glu Met His His Ser Ser Ser Tyr
            900                 905                 910

Gly Val Asp Tyr Lys Arg Ser Tyr Pro Thr Asn Ser Leu Thr Arg Ser
        915                 920                 925

His Gln Ala Thr Thr Leu Lys Arg Asn Asn Thr Asn Ser Ser Asn Ser
    930                 935                 940

Ser His Leu Ser Arg Asn Gln Ser Phe Gly Arg Gly Asp Asn Pro Pro
945                 950                 955                 960

Pro Ala Pro Gln Arg Val Asp Ser Ile Gln Val His Ser Ser Gln Pro
                965                 970                 975

Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn Ala Tyr
            980                 985                 990

Asn Ser Leu Thr Arg Ser Gly Leu  Lys Arg Thr Pro Ser  Leu Lys Pro
        995                 1000                1005

Asp Val  Pro Pro Lys Pro Ser  Phe Ala Pro Leu Ser  Thr Ser Met
    1010                1015                1020

Lys Pro  Asn Asp Ala Cys Thr
    1025                1030
```

<210> 8
<211> 72
<212> PRT
<213> Homo sapiens

<400> 8

```
Pro Pro Pro Ala Pro Gln Arg Val Asp Ser Ile Gln Val His Ser Ser
1               5                   10                  15
```

Gln Pro Ser Gly Gln Ala Val Thr Val Ser Arg Gln Pro Ser Leu Asn
            20   25   30

Ala Tyr Asn Ser Leu Thr Arg Ser Gly Leu Lys Arg Thr Pro Ser Leu
        35   40   45

Lys Pro Asp Val Pro Pro Lys Pro Ser Phe Ala Pro Leu Ser Thr Ser
    50   55   60

Met Lys Pro Asn Asp Ala Cys Thr
65   70

<210> 9
<211> 65
<212> PRT
<213> Homo sapiens

<400> 9

Pro Pro Pro Gln Pro Gln Arg Lys Pro Gln Val Gln Leu His Val Gln
1   5   10   15

Pro Gln Ala Lys Pro His Val Gln Pro Gln Pro Val Ser Ser Ala Asn
            20   25   30

Thr Gln Pro Arg Gly Pro Leu Ser Gln Ala Pro Thr Pro Ala Pro Lys
        35   40   45

Phe Ala Pro Val Ala Pro Lys Phe Thr Pro Val Val Ser Lys Phe Ser
    50   55   60

Pro
65